

Listing of Claims

1 Claim 1 (Currently Amended): A method of enabling an operator to remotely
2 manage a plurality of field devices designed to implement a process in a plant, said plant
3 further containing a field device management station (FDMS) coupled to said plurality
4 of field devices by a control network, wherein said FDMS is designed to issue a plurality
5 of commands to each of said plurality of field devices on said control network, said
6 method comprising:

7 providing a wireless connection from a first client, wherein said wireless
8 connection provides communication between said first client and said FDMS;

9 enabling said operator to issue a first command from said first client to a first field
10 device contained in said plurality of field devices, wherein said first command is
11 contained in said plurality of commands;

12 transferring an indication from said first client to said FDMS on said wireless
13 connection in response to said first command being issued by said operator, said
14 indication indicating that said operator has issued said first command from said first
15 client;

16 forwarding said first command from said FDMS to said first field device on said
17 control network in response to receiving said indication,

18 whereby said operator manages said plurality of field devices using said first client
19 based on said wireless connection,

20 providing a wire-based connection between a second client and said FDMS;

21 enabling said operator to issue an another command from said second client, said
22 another command being directed to a second field device contained in said plurality of
23 field devices;

24 transferring an another indication from said second client to said FDMS on said
25 wire-based connection medium upon said user issuing said another command; and

26 forwarding said another command from said FDMS to said second field device on
27 said control network upon receiving said another indication,

28 whereby commands from said first client and said second client are channeled
29 through said FDMS.

1 Claim 2 (Currently Amended): ~~The method of claim 1, further comprising: A~~
2 method of enabling an operator to remotely manage a plurality of field devices designed
3 to implement a process in a plant, said plant further containing a field device management
4 station (FDMS) coupled to said plurality of field devices by a control network, wherein
5 said FDMS is designed to issue a plurality of commands to each of said plurality of field
6 devices on said control network, said method comprising:
7 providing a wireless connection from a first client, wherein said wireless
8 connection provides communication between said first client and said FDMS;
9 enabling said operator to issue a first command from said first client to a first field
10 device contained in said plurality of field devices, wherein said first command is
11 contained in said plurality of commands;
12 transferring an indication from said first client to said FDMS on said wireless
13 connection in response to said first command being issued by said operator, said
14 indication indicating that said operator has issued said first command from said first
15 client;
16 forwarding said first command from said FDMS to said first field device on said
17 control network in response to receiving said indication,
18 whereby said operator manages said plurality of field devices using said first client
19 based on said wireless connection,
20 providing a wire-based connection between a second client and said FDMS;
21 enabling said operator to issue an another command from said second client, said
22 another command being directed to a second field device contained in said plurality of
23 field devices;
24 transferring an another indication from said second client to said FDMS on said
25 wire-based connection medium upon said user issuing said another command;
26 forwarding said another command from said FDMS to said second field device on
27 said control network upon receiving said another indication,
28 whereby commands from said first client and said second client are channeled
29 through said FDMS;

30 connecting said first client to a said second field device contained in said plurality
31 of field devices;

32 transferring a second command from said FDMS to said first client using said
33 wireless connection, wherein said second command is directed to said second field
34 device; and

35 sending said second command from said first client to said second field device,
36 whereby said second command is forwarded from said FDMS to said second field device
37 without using said control network.

1 Claim 3 (Currently Amended): The method of claim 2, further comprising enabling
2 said operator to issue said second command from said first client, wherein said FDMS
3 receives a second indication from said first client, said second indication indicating that
4 said second command has been issued at said first client and performs said forwarding
5 ~~transferring~~ said second command upon receiving said second indication.

1 Claim 4 (Currently Amended): The method of claim 2 ~~1~~, wherein said wireless
2 connection is provided to cover the entire communication path between said FDMS and
3 said first client.

1 Claim 5 (Currently Amended): The method of claim 2 ~~1~~, wherein said wireless
2 connection is provided between said first client and a network device, wherein said
3 network device is connected to a network connecting said network device to said FDMS
4 by a wire-based medium.

1 Claim 6 (Canceled)

1 Claim 7 (Currently Amended): The method of claim 2, further comprising
2 maintaining a central log of said first command, said second command and said another
3 command in said FDMS, wherein said central log is updated after said operator issues
4 said first command, said second command and said another command respectively.

1 Claim 8 (Previously Presented): A field device management station (FDMS)
2 enabling management of a plurality of field devices, said plurality of field devices being
3 coupled to said FDMS by a control network, said FDMS comprising:

4 a wireless interface providing connectivity to a first client by a wireless medium;
5 and

6 a data manager block receiving an indication from said first client on said wireless
7 medium, said indication indicating that a first command has been issued from said first
8 client, said first command being directed to a first field device contained in said plurality
9 of field devices, said data manager forwarding said first command on said control
10 network in response to receiving said indication,

11 wherein said first command is issued by an operator from said first client such that
12 said operator manages said plurality of field devices using said first client from locations
13 distant from said FDMS,

14 a wire-line interface providing connectivity to a second client by a wire-line based
15 medium,

16 said data manager block receiving another indication from said second client by
17 said wire-line based medium, said another indication indicating that a second command
18 directed to a second field device contained in said plurality of devices has been issued,
19 said data manager block forwarding said second command to said second field device on
20 said control network in response to receiving said another indication.

1 Claim 9 (Currently Amended): ~~The FDMS of claim 8~~ A field device management
2 station (FDMS) enabling management of a plurality of field devices, said plurality of field
3 devices being coupled to said FDMS by a control network, said FDMS comprising:

4 a wireless interface providing connectivity to a first client by a wireless medium;
5 and

6 a data manager block receiving an indication from said first client on said wireless
7 medium, said indication indicating that a first command has been issued from said first
8 client, said first command being directed to a first field device contained in said plurality

9 of field devices, said data manager forwarding said first command on said control
10 network in response to receiving said indication,

11 _____ wherein said first command is issued by an operator from said first client such that
12 said operator manages said plurality of field devices using said first client from locations
13 distant from said FDMS,

14 _____ a wire-line interface providing connectivity to a second client by a wire-line based
15 medium,

16 _____ said data manager block receiving another indication from said second client by
17 said wire-line based medium, said another indication indicating that a second command
18 directed to a second field device contained in said plurality of devices has been issued,
19 said data manager block forwarding said second command to said second field device on
20 said control network in response to receiving said another indication,

21 wherein said data manager block is operable to receive a third indication from said
22 first client on said wireless medium, said third indication indicating that a third command
23 directed to a third field device contained in said plurality of field devices has been issued
24 from said first client, said third field device being connected to said first client, said data
25 manager block forwarding said third command on said wireless medium to said first client
26 in response to receiving said third indication.

1 Claim 10 (Canceled)

1 Claim 11 (Currently Amended): The FDMS of claim 9, further comprising:

2 a wireless client handler provided between said wireless interface and said data
3 manager, said wireless client handler receiving said first indication on said wireless
4 medium, said wireless client handler further receiving a first response from said data
5 manager block and forwarding said first response on said wireless medium to said first
6 client; and

7 a wire-line client handler provided between said wire-line interface and said data
8 manager, said wire-based client handler receiving said second indication ~~command~~ on
9 said wire-based medium, said wire-based client handler further receiving a second

response from said data manager block and forwarding said second response on said wire-based medium.

12 (Original): The FDMS of claim 11, wherein said data manager receives a request to establish a connection from said first client and instantiates said wireless client handler in response to receiving said request.

Claim 13 (Previously Presented): The FDMS of claim 9, wherein said data manager maintains a central log containing information on said first command and said second command.

Claim 14 (Currently Amended): A computer readable medium carrying one or more sequences of instructions for causing a field device management station (FDMS) to enable management of a plurality of field devices, said plurality of field devices being coupled to said FDMS by a control network, wherein execution of said one or more sequences of instructions by one or more processors contained in said FDMS causes said one or more processors to perform the actions of:

receiving a first indication from a first client on a wireless medium, said first indication indicating that a first command directed to a first field device contained in said plurality of field devices has been issued from said first client; ~~and~~

forwarding said first command on said control network to said first field device in response to receiving said first indication,

wherein said first command is issued by an operator from said first client such that said operator manages said plurality of field devices using said first client,

receiving a third indication from a third client on a wire-line based medium, said third indication indicating that a third command directed to a third field device contained in said plurality of devices has been issued from said third client; and

forwarding said third command to said third field device on said control network in response to receiving said third indication.

1 Claim 15 (Currently Amended): ~~The computer readable medium of claim 14,~~
2 ~~further comprising:~~ A computer readable medium carrying one or more sequences of
3 instructions for causing a field device management station (FDMS) to enable management
4 of a plurality of field devices, said plurality of field devices being coupled to said FDMS
5 by a control network, wherein execution of said one or more sequences of instructions by
6 one or more processors contained in said FDMS causes said one or more processors to
7 perform the actions of:

8 receiving a first indication from a first client on a wireless medium, said first
9 indication indicating that a first command directed to a first field device contained in said
10 plurality of field devices has been issued from said first client;

11 forwarding said first command on said control network to said first field device in
12 response to receiving said first indication,

13 wherein said first command is issued by an operator from said first client such that
14 said operator manages said plurality of field devices using said first client,

15 receiving a third indication from a third client on a wire-line based medium, said
16 third indication indicating that a third command directed to a third field device contained
17 in said plurality of devices has been issued from said third client;

18 forwarding said third command to said third field device on said control network in
19 response to receiving said third indication;

20 receiving a second indication from said first client on said wireless medium, said
21 second indication indicating that a second command directed to a second field device
22 contained in said plurality of field devices has been issued from said first client, said
23 second field device being connected to said first client; and

24 forwarding said second command on said wireless medium to said first client in
25 response to receiving said indication.

Claim 16 (Canceled)

1 Claim 17 (Previously Presented): The computer readable medium of claim 15,
2 further comprising maintaining a central log containing information on said first

command, third command and said second command.

Claim 18 (Currently Amended): A computer readable medium carrying one or more sequences of instructions for causing a client to enable remote management of a plurality of field devices, said plurality of field devices being coupled to a field device management station (FDMS) by a control network, wherein execution of said one or more sequences of instructions by one or more processors contained in said client causes said one or more processors to perform the actions of:

enabling a user to issue a first command directed to a first field device contained in said plurality of field devices;

sending an indication to said FDMS on a wireless medium, said first indication indicating that said command directed to said first field device has been issued;

receiving a first response on said wireless medium from said FDMS;

wherein said operator manages said plurality of field devices using said first client,

wherein said client is connected to a second field device by a path,

enabling said user to issue a second command from said client, wherein said second command is directed to a said second field device contained in said plurality of field devices;

sending a second indication to said FDMS on said wireless medium indicating that said second command directed to said second field has been issued;

receiving said second command from said FDMS on said wireless medium; and

forwarding said second command to said second field device on said path after said receiving from said FDMS.

Claim 19 (Canceled)

Claim 20 (Currently Amended): A method of enabling an operator to remotely manage a plurality of field devices designed to implement a process in a plant, said plant further containing a field device management station (FDMS) coupled to said plurality of field devices by a control network, said method comprising:

5 providing a wireless connection from a first client, wherein said wireless
6 connection provides communication between said first client and said FDMS;
7 enabling said operator to issue a first command from said first client to a first field
8 device contained in said plurality of field devices;
9 transferring said first command from said first client to said FDMS on said
10 wireless connection;
11 forwarding said first command from said FDMS to said first field device on said
12 control network,
13 whereby said operator manages said plurality of field devices using said first client,
14 connecting said first client to a second field device contained in said plurality of
15 field devices;
16 transferring a second command from said FDMS to said first client using said
17 wireless connection, wherein said second command is directed to said second field
18 device;
19 sending said second command from said first client to said second field device,
20 whereby said second command is forwarded from said FDMS to said second field device
21 without using said control network; and
22 enabling said operator to issue said second command from said first client, wherein
23 said FDMS receives said second command and performs said forwarding ~~transferring~~ said
24 second command.

1 Claim 21 (New): The method of claim 1, wherein said wireless connection is
2 provided to cover the entire communication path between said FDMS and said first client.

1 Claim 22 (New): The method of claim 1, further comprising maintaining a central
2 log of said first command and said another command in said FDMS, wherein said central
3 log is updated after said operator issues said first command and said another command
4 respectively.

1 Claim 23 (New): The FDMS of claim 9, further comprising a database interface

2 maintaining a central log of said first command and said another command, wherein said
3 central log is updated after said operator issues said first command and said another
4 command respectively.

1 Claim 24 (New) : The method of claim 20, wherein said wireless connection is
2 provided to cover the entire communication path between said FDMS and said first client.